

Field Diary
Arizona

July 9 - Oct. 6
1923

July 9, 1923.
Left Washington, D.C. for
Phoenix, Ariz. at 3.30 P.M.

July 10,
Arrived Chicago 9.30 A.M. - went
to Field Museum where I met
Dr. Hartert, Mr. John J. Zinsser
and saw again Mr. Gearhart,
also met again Edmund Heller
and his wife who recently
returned from South America.
Had dinner with the Hellers
and met Mr. Martin K. Boory
at the depot and we took
the California Limited at
8 P.M. for Arizona.

July 11-12..
En route to Phoenix, Ariz.

July 13
Arrived Phoenix, Ariz. 7.45
A.M. Most of day was spent
with M.C. Musgrave and D.A.

Gilchrist of the Biological Survey.
In afternoon we called at the
office of the State Game Warden.
Warden was away, but his
office deputy furnished us with
a scientific collecting permit.
Also found Gov. Hunt ^{Gov. Hunt} out of
town.

July 14 Quitovaquia, ~~Ariz.~~
Made a ^{7.30} trip with Mr. Muzzagr,
starting ~~8 A.M.~~ ^{7.30} to Quitovaquia,
on the Mexican boundary driving
about 5 P.M. The object of our
trip was to see some crossed
wild and domestic sheep. We
stopped for lunch at the mining
town, Ajo.

We found an old Papago Indian
friendly and willing to help us
at the little ranch at a spring
just south of the border about
200 yards. He promised to have
the sheep ranging near brought
in and we arranged to stop
for the night at an American

ranch just north of the line.
Mt. sheep - domestic cross.
The sheep were driven into a
corral where we were able to
examine and photograph them,
and the old Papago Indian who
seems to be the owner and speaks
very fair Spanish answered a
number of my questions. Some
^{4 or 5} ~~three~~ years ago several goats
^{loves} and domestic ewe sheep of the
strain known as "Rambelay" ranged
from the Indian ranch into the
hills near where mountain
sheep are still said to occur.
The hills are only four or five
miles west or northwest from
the ranch. They were surprised to
find that this ewe gave birth
to a ewe lamb of peculiar appearance,
its pelage part wool and part
hair. This ewe grew and three
years ago gave birth to a ewe
lamb still living which is
evidently $3/4$ mt. sheep and

except for small size is strikingly like a mountain sheep in appearance including color and character of pelage. In the same year the Rambouillet ewe gave birth to a ram which much resembles a domestic sheep but has the large characteristic crinkled horns of the mt. sheep.

In addition to these are young ewes all believed to be the result of matings of the crossed ~~ram~~ with his half sister and some of his own progeny. These all look much like his half sister or first cross. The Indians consider the animals very valuable.

July 15 ^{at Phoenix} Left Linitobazula and returned to Tucson in time to catch a train at 6.25 P.M. to Tucson, where we arrived at 10.45 P.M. and went to Hotel Congress.

July 16. Tucson.

Remained in Tucson conferring with W.P. Taylor, Chas. T. Vorhies and others, and arranging to make a trip to Santa Catalina Mts. with W.P. Taylor tomorrow.

July 17 Santa Catalina

Mts. Left Tucson at 7.40 A.M. with W.P. Taylor and Martin K. Bovey and ascended by auto via Charte to little settlement at recreation area known as Summerhaven at 7700 ft. in the upper part of Sabino Canyon near Mt. Lemmon. Arrived about noon. Rain in afternoon prevented our making trips on foot as intended.

July 18, Tucson

Made a trip on foot in morning to lookout station on summit of Mt. Lemmon, and early in afternoon climbed Mt. Bigelow. These trips afforded a clear idea of the

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mountains and surrounding country, at 3:30 P.M. we entered the controlled section of the mountain grade and descended again to Tucson, arriving about 8:30 P.M.

July 19, Tucson.

Remained in Tucson attending to routine matters.

July 20, Tucson to Santa Rita Mts. and return. Made a trip with Taylor and Boory up Modera Canyon to about 5800 ft. altitude and then climbed on foot to near the summit of Old Baldy where we turned back owing to a gathering thunderstorm, and returned to Tucson. A general idea of the character of the country was obtained and a number of species of mammals, birds and plants were noted.

Family had arrived from the east by auto early in the day

and I found them all at Dr. Taylor's house.

July 21-23 - Remained at Tucson attending to routine matters and arranging for main trip.

July 24, Tucson to Santa Rita Mts. Left Tucson for Santa Rita Mts. 12:30 P.M. accompanied by W.P. Taylor in his own car and Martin K. Boory, Orville and Luther in my own. Reached camp at McElharry's Ranch and got out first traps.

July 25-31, Santa Rita Mts. Remained at same camp from which trips were made to near summit of mountains. On latter date we returned to Tucson.

Aug. 1, Tucson

Remained in town attending to

routine matters.

Aug. 2, Tucson

Left Tucson in morning and 23 miles from town developed engine trouble and had to be pulled back to town, this operation taking all the afternoon. We were headed for Santa Catalina Mts. when forced to turn back.

Aug. 3. Tucson to Sta. Catalina Mts.

Morning required for repairing car. Left Tucson in afternoon and ascended, via Oracle to base of mountains on the north side where we camped for the night.

Aug. 4. Camp at north base to crest of Santa Catalina Mts.

Left camp early and ascended steep grade. Entered controlled

section half an hour late and had to pull out to one side and wait an hour and a half until next period. Reached the top shortly after noon and was able to get out good set of traps along small stream near cabin in which we found lodging.

Aug. 5 - 10, Santa Catalina Mts. Ariz.

Remained working the upper slopes of the mountains. On latter date returned to Tucson.

Much rain during this period which prevented or delayed effective work.

Aug. 11 - 13, Tucson and vicinity.

Remained at Tucson arranging routine matters and from town making trips to vicinity of Ft. Lowell where topotypes of Saguarodon h. crinegate were secured.

Aug. 14 Tucson to near Tombstone, Ariz.

Left Tucson at 5.45 P.M. and ran to near Tombstone camping 4 miles from west of town.

Road from Tucson followed generally level ~~up~~ Lower Sonoran Plains, but east of Tucson entered more rough rolling country.

Aug. 15, camp near Tombstone to Ranger Station at El Portal.

Left camp early and after breakfast in Tombstone continued by highway to Bisbee, thence to Douglas where we had lunch and in afternoon we continued to Pecos, N.M. where we turned west and camped near the Ranger Sta. at El Portal, the east base of the Chiricahua Mts.

Road led through picturesque, broken country with granite boulders

protruding in the vicinity of Tombstone and was generally rough and irregular to point where we entered Tombstone Canyon.

It is Lower Sonoran in character however to this point. Seven miles north of Bisbee we entered Tombstone Canyon down which a small stream flows toward the San Pedro River valley. Here we entered Upper Sonoran zone and ascended the canyon to a divide at 6030 ft. descending beyond rapidly into Bisbee.

Tombstone Canyon is flanked on the east by the Mule Mts, and on the west by the Black Ridge. These are low timbered mountains apparently reaching about 7000 ft. and upper Sonoran in character. Passing through Bisbee we turned eastward and descended rapidly to the level Lower Sonoran plain forming the upper part of the Sulphur Spring valley. Road is paved and in fine condition from Bisbee to Douglas, both being prosperous

copper mining centers. From Douglas our route was northeast across the generally level plain to a point between North College Peak and a low southern extension of the Chiricahua Mts. where we began to ascend gradually toward a pass in Upper Sonoran Zone between Chiricahua and Apache stations on the El Paso and Southwestern Railroad.

This pass is characterized mainly by the open grassy conditions from which Lower Sonoran species are absent. About 12 miles south of Rodes on the northern side of the pass we again entered Lower Sonoran zone which forms a broad arm along the upper part of the San Simon Valley. To the east the Patonville Mts.

rise in rounded contour and appear largely naked, but are said to bear considerable oak timber on their upper slopes. They appear to be wholly in Upper Sonoran zone. From Rodes, N.M. we crossed the

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Arizona boundary and ascended to the Ranger Station at 5000 ft. at El Portal. Lower Sonoran zone occupies the ^{gradually sloping} San Simon Valley floor and reaches up to near the mouth of Leave Creek Canyon.

Aug. 16-20, Chiricahua Mts., Ariz.

Remained working the mountains and vicinity until Aug. 20 when we left for en route to the Huachuca Mts. On Aug. 18-19 a trap was made to San Simon Bieneza where I hoped to secure specimens of Sigmodon, but found only unused or not very fresh wood burrows and no specimens were obtained.

C. B. Schofield, Ranger at El Portal address Rodes, N.M.

H. L. Martyn, Rodes, N.M.
Would like general publications

Above gentlemen were very helpful to us while working at El Portal.

Left Ranger Station at El Portal

11.40 A.M. and return via same route as on Aug. 15 to Bisbee where we turned south and had supper on the Mexican side at Naco, Son., after supper we retraced a few miles and took the road to Ft. Huachuca camping on the road within sight of Naco.

Naco, Ariz. is situated on the Mex. boundary in Lower Sonoran zone which extends north to near Bisbee, west of a line of upper Sonoran hills which seem to extend from Bisbee to the Mexican line.

Aug. 21 (Fri.). Huachuca Mts., Ariz.

Left camp a few miles from Naco and followed the road in generally west direction to Carr Canyon on the eastern slope of the Huachuca Mts., where we learned a bitter point for our work would be Ramsay Canyon which was reached by a detour about noon. Arranged in afternoon to ascend mountains on horseback

in morning.

No 2
Aug. 22 (Wed.), Huachuca Mts.

Made a trip today up Ramsay Canyon and out to the crest of the mountains at a point several miles north of Miller Peak, where we turned south along the crest and headed Carr Canyon finally reaching a point where we were quite near and were able to get clear views of the slopes of Miller Peak, the highest mountain in the range. Remarkably few birds were seen. From the top excellent views were had especially toward the west and south. Toward the west we were able to see Baboquivari Peak and much of the Baboquivari Range was distinctly visible over the lower intervening mountains. Toward the south ranges of mountains of moderate height could be seen in Mexico and

smoke rising from one point marked the mining camp of Cuananea.

Life Zones - Transition zone extends to the summit of these mountains and they appear rather arid in character as compared with the Chiricahua Mountains.

Arville and Gutter rode up with Martin and I and enjoyed the trip very much as it was the first time we have made any extended trip on horseback all together. In a few places the trail was narrow and some care was required in handling a horse in order to pass safely.

Aug. 23 (Thurs) Huachuca Mts.
to camp between Patagonia and Nogales,
Left Huachuca Mts (Ramsay Canyon),
at 2.35, and after stopping for supper
at Patagonia we continued after dark
a few miles and camped on road
at 8.30 PM.

Road from Ramsay Canyon led

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northward past Ft. Huachuca which is located at the base of the mountains near the north end and on to the Nogales highway leading southwest between the Mustang Mts. and the southern end of the Whitstone Mts.

Life Zones. We were in Lower Sonoran Zone to a point between the Mustang Mts. and the southwestern end of the Whitstones where we ascended into Upper Sonoran Zone at about 4200 ft. on the open plain. This belt of Upper Sonoran extends across to the Santa Rita Mts. between the head of Empire Gulch and Sonora Creek. A few miles south of Sonora Station, however, we entered a small gulch along which Lower Sonoran elements began to appear and this belt became gradually broader to near Patagonia where it is evidently of considerable extent.

Whitstone Mts. - Passing near the southern end a good view was

bed of Granite Peak which is evidently
timbered with oak and does not
rise above Upper Sonoran zone.

Mustang Mts. These form a small
group of irregular, rocky peaks rising
perhaps 500 feet into Upper Sonoran
zone with deep Upper Sonoran forests
only slightly above the plain between
them. They bear a few oaks beginning
on the lower slopes, where mesquites
and Yucca radiosa give way to
Sotoliva along a sharp line.

Weather - Cloudy and threatening, but
no rain. Abundant rains have
produced a fine growth of grama
grass in this section.

Aug. 24 (Fri.), Camp on road
to Nogales to camp near Secundino Ranch
in Altar Valley.

Left camp early and ran on down
valley to Nogales for breakfast then
north by highway to near Arivaca
junction where we turned west and
south to Arivaca, thence on down

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Arivaca Creek and out into the
Altar Valley, where we camped in
a pouring rain in a little draw in
which mesquites afforded an
opportunity to put up tent.

Road was rough and general
surface of country irregular all
the way through, but Lower Sonoran
along entire route. Three crossings
of Arivaca Creek were made just
in time to escape a flood which
came down as we learned next
day during the night.

Aug. 25 (Wed.) Tucson, Ariz.

An attempt was made to cross
the drainage channel down Altar
Valley at Secundino Ranch, but a
flood had come down the night
before so that the bottom was
a bog and passage impossible. We
then turned south to Buenos Ayres
Ranch and north again west of
the wash. This enabled us to
head the flowing stream and

reach Tucson by the road ~~with~~
passing north from San Fernando
east of the Baboquivari Mts.
Territorial rains are making auto travel
difficult. In places it has been
reported that autos stuck in sand
in attempting stream crossings have
been washed away.

Aug. 26-27 Tucson, Ariz.
Remained in Tucson.

Aug. 28-
Left Tucson in afternoon and after
stopping for supper at Florence continued
toward Phoenix, camping for the night
on the road a few miles east of Mesa.

Aug. 29
Broke camp and after breakfast at
Mesa continued to Phoenix where I had
a conference with the Governor and lunch
with Aldo Leopold. Continued in afternoon
and evening to Fish Creek en route
to Flagstaff. Camped for the night at
Fish Creek.

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Aug. 30 - Fish Cr. to Pine
Breakfast at Fish Creek and then
started on passing Roosevelt Dam
and continuing up the slope to Pine
where we camped for the night.

Life zones. Lower Sonoran zone extends
to the base of a sharp ascent near
Lybourn. Lower Sonoran in this section
indicated in part by a good growth
of giant cactuses. Upper Sonoran zone
extends to Pine where Transition zone
is entered rather abruptly.

Aug. 31 - Pine to camp N. of Tuzigoot Valley.
From Pine we ascended Strawberry
Hill as it is called and topped the
rim of Tonto Basin. Here we entered
an area which has been visited by
heavy almost daily rains with the
result that the roads are very bad -
in fact almost impassable. We soon
began floundering through mud and
water. Several large cars were found
stuck along the road and we helped
them to get out. A Maxwell got stuck

and while we assisted by pushing stripped differential gears in getting out of a mud hole which we had just pulled through without stopping about a mile south of Long Valley. We reached Long Valley in a pouring rain. Our stock & gasoline was replenished and we continued until dark over a very heavy road. Our total mileage for the day was only about 36.

Sept 1 - Flagstaff.

Road was rough and bad all the way in, but there was no deep mud after we reached Mormon Lake, which was passed shortly after noon. Several cars had started south from Mormon Lake, but our report on condition of road caused them to turn back. A number of people were fishing at Mormon Lake where good catches, especially of perch were reported and we saw a few being caught. Luther, as usual, was anxious to stop and fish, but we had no non-resident license and for other reasons

found it necessary to push on.

Sept. 2 - Flagstaff to camp about 30 miles south of Grand Canyon.

Left Flagstaff after noon and proceeded west to Maine and then north by Grand Canyon highway to a point where we camped for the night on very wet ground, some tire troubles delayed us on the road.

Sept. 3. Grand Canyon.

Left camp early, but helping stalled cars out of mud and some tire troubles delayed us and we did not reach the canyon until afternoon. Saw Col. Crosby and arranged to go down to Hermit Lk. camp tomorrow to inspect forage conditions for prospective antelope.

Sept. 4 - Hermit Lk. camp.

Left Grand Canyon ^{shortly before noon} with Park ranger Col. Peek and descended Hermit Trail to the camp. Summer rains have brought up some forage and general conditions appear even more favorable for antelope than

at the time of my visit in April. Mr. Pozant, the manager, expressed his desire to assist the antelope in every way possible. Several types of forage, including a little grama grass, have made a good growth.

Sept. 5 - Phantom Ranch.

Left Hermit Cr. camp and rode with ranger Leal Peck to Phantom Ranch, in the mouth of Bright Angel Canyon, 26 miles. Here I was joined in the evening by Leal. W.W. Crosby, Park Superintendent, and party who are on their way across to the north rim to meet Mr. Stephen T. Mather, Director of the Nat. Park Service. It was still hot in the bottom of the canyon and shots were all the covering we required during the night.

Sept. 6 - Phantom Ranch to Bright Angel Point.

Leaving Leal Crosby to follow later and camp on the way I pushed ahead with Martin K. Bovey and Blondy Jensen to

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the north rim.

We found the trail badly washed out in places, but easily passable.

On reaching the rim we turned to the left and reached the ranger station ~~at~~ near Bright Angel Point about 6 o'clock. After supper at the station Blondy Jensen came along and invited me to ride out to the point by auto, a distance of about 2 1/2 miles. Wylie Way camp, managed by Mr. McKee is located at the point and we found a number of tourists spending the night there. The point commands a view down Bright Angel Canyon, but the view of the canyon as a whole did not appear to me particularly fine.

Sept. 7 - Bright Angel Point to V.T. Park.

Rode north with Martin K. Bovey and Park ranger MacDonald up Thompson Canyon to the head of South Canyon where the ranger who had come along as a guide turned back. Bovey and I went on down the Canyon a mile or so to the

head of the water below which we set out about 70 mouse traps for shrews. We then continued by the trail through the woods toward the north, finally emerging on the highway and on several miles to W.S. Reuter's summer camp at V.T. Park. Here we stopped for the night. Was surprised to find George Elias 3^d and the camp, he having just arrived to photograph the deer.

Deer. Very few deer were seen in the part and I learned that for some time they have not been coming out in numbers. Abundant summer rains have brought up grass in profusion, but the deer are evidently feeding just now upon mushrooms. All of those seen by me appeared to be in good condition, but some of the does are reported to be poor. Dr. Barrett, Director of the Milwaukee Public Mus. told me that he was able to see the ribs on some of them. Deer are still taking about all the aspen leaves within reach and sometimes rear on their hind legs to get them. They rear on their hind legs at times, and while reaching

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for the leaves take two or three steps forward with the hind feet nibbling meanwhile at the leaves and then drop to the ground on their front legs. The deer situation was discussed with Mr. Matter to a limited extent and I found he is still opposed to any opening of the area to hunting. He is anxious to have the Grand Canyon Nat. Park extended 25 miles north. This would include the majority of the deer and in my judgment complicate control of them.

Dist. travelled about 20 miles.

Sept. 8 - Bright Angel Point (Wylie Way Camp). Returned via South Canyon to Bright Angel Point - about 20 miles.

Deer. A few only were seen in the timber along the road. One big buck was observed to bite into a large mushroom under a tree. He took out a bite, pulling up the mushroom by the stalk and this falling out of his mouth rolled down the hillside as he saw me and made a short jump.

We remained over night at Wylie Way Camp

and there was discussion of game and other matters of interest around the big camp fire. Mr. Mather spoke briefly and introduced me and I talked of the antelope, deer and other game in general terms.

Sept. 9. Wylie Way Camp to Phantom Ranch.

Returned into the canyon, reaching Phantom Ranch about 6 P.M.

Weather has been dry ever since our arrival at Flagstaff.

Beaver. A few fresh beaver signs in the shape of low dams were seen a short distance below Roaring Springs. Here the beavers maintain low dams in small side channel of the main stream. A few cottonwoods, most of which have been cut, grow in the vicinity and it seems probable that there is a shortage of food for even the very small number that occur there. I told Col. Crosby I thought it would be a good thing to stock a considerable number of cottonwood cuttings

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along the stream this fall where they would be in position to grow ~~this~~ next spring and he has agreed to adopt this suggestion.

Sept. 10 - Phantom Ranch to Grand Canyon.

Returned today to the south rim where I found Orville and Luther had been having a good time in my absence, going on several short trips with Bert Taylor who seemed to take quite an interest in them.

Sept. 11 - Grand Canyon to Flagstaff.

Left Grand Canyon and drove to Flagstaff, where in the evening Martin H. Booy left for California.

Sept. 12 - Remained in Flagstaff. It stormed most of the day.

Sept. 13 - Flagstaff to camp in Juniper Belt.

Left Flagstaff about 7 P.M. and drove across the pass into the juniper belt on the road to Cameron. Weather was threatening and we put up our tent among the junipers.

Sept. 14 - Indian Ruins, about 10 miles southwest of Black Falls.

We came on through the Deadman Wash country and down to this place, arriving shortly before noon.

These Indian ruins are now regularly visited by a few tourists, but seem little known. Several rather large buildings made of flat slabs of sand are located in prominent places on whitish limestone ledges. The altitude is 5500 ft.

Traps were set in the afternoon.

Sept. 15 - Indian Ruins to Cameron (5 mi. S.W.)

Left Ruins today and drove to Cameron and over an old road south near the ^{Little Colorado} river a few miles and camped at ^{in pine} sandstone outcroppings

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about 5 miles southwest of Cameron. Notiosorex. The prize of last night's work was a specimen of this genus taken by Orville 2 1/2 ft. from the ground along a limestone ledge.

Sept. 16 - Camp 5 mi. S.W. of Cameron.

Remained at same place engaged in general field work and writing up notes.

Sept. 17-18 ^{Tue} ~~(Mon.)~~ Camp 5 mi. S.W. of Cameron.

Remained at same camp. A heavy storm lasted much of the 17th and on the 18th S.F. Mt. appeared largely covered with snow. Local thunder storms continued on the 18th, but no rain fell at our camp. Day, however, was windy and cold.

Wed
Sept. 19 (Tue). Camp 5 mi. S.W. of Cameron.

Remained at same camp. Day beautifully clear and calm. S.F. Mt. covered with snow extending well down into the timber.

This section of Painted Desert is a "bad lands" country, ~~and~~ with grayish, brownish, or reddish sandstone masses, extensively eroded so that caps project above a sandy general level. Soil is poor and there is little vegetation. ^{at a point S.W.} From ~~near~~ here the escarpment of the lowermost Plateau rises gradually toward the N.W. The Echo cliffs are visible in the distance and appear to rise ^{on end} with a lower area behind them. Across the Fifth Colorado cliffs or steep bluffs border the river valley as far as I can see see both up and down. Black Point is visible as a place where lava has flowed out to near the Fifth Colorado.

Sept. 20 (Thurs). Flagstaff.
From near ~~camp~~ ^{camp} returned to Flagstaff in afternoon.

Sept. 21 (Fri.). Camp near Williams.

Left Flagstaff early in afternoon intending to go to Painted Desert country via Leupp, but we found the crossing of Walnut Cr.

No 13

practically impassable and roads washed out, so returned to Flagstaff and ran west to near Williams where we camped among the pines.

Sept. 22 (Sat.) Near Williams to camp on road about 15 mi. S. of Globe.

Left camp and followed main road to Kingman, thence along main line of R.R. to McCombs where we turned north and camped nearly a rocky hill that afforded some shelter from hard wind that was blowing.

Road today was through pine forested plateau country to a point a short distance west of Williams where we ran into Upper Sonoran zone extending to near head of Austin Canyon, where we entered a tongue of Lower Sonoran extending up the canyon. Upper Sonoran extending somewhat farther in hills.

Sept. 23 (Sat.). Camp about 15 S. of Globe to Dolans Spring.

Left camp in morning and drove on into Globe and then on north to Dolans

Spring to obtain specimens of Cutellus
~~for neglect~~ from type locality.

Road led north over gradually sloping plain to Ahlside which is located at about 4500 ft. at the base of one of the higher ranges of mountains in this vicinity, the highest point Ahlside Peak extending well into Upper Sonoran Zone. From Ahlside the road led north - we following the highway to Searchlight to the point where it turns directly west across Petrified Valley to the ferry (now out of commission) on the Colorado River. We took the "White Hills" road at this point and finally turned east and up over an old, slightly used road to the spring at 4500 ft. in a pass separating Petrified and Huachuca valleys.

A full set of traps was placed at once for in places where the Cutellus might be expected to occur, but none were taken during the day.

Veg. Near Dolan's Spg. characteristic veg. is mesquite, Acacia, a tree Yucca and

swallow
a yucca with very long leaves.

¹ Dolan's Spg. From the spring, marked at the base of the hill by several large, bright green mesquites, the water is piped down to a tank where a considerable number of horses and cattle water.

Sept. 24 (Mon.) Camp on bottom in Petrified Valley.

Moved camp a few miles (about 5) in afternoon to the level bottom of Petrified Valley where in sandy soil I hoped to have better success in the securing the Cutellus which could not be found at Dolan's Spg.

Veg. Here Acacia is the dominant species, with strips of open, sandy grass land along the bottom in which many small kangaroo rats have their burrows.

Sept. 25 (Tue.) Colorado River (Old Searchlight Ferry).

Failed to find ~~kangaroo~~ Cutellus at camp in Petrified Valley. Ran on in to

chloride where provisions were secured and the road to the River followed.

Road led across Detrital Valley and over a low range of ^{mountains}, crossing a pass at 4200 ft.

Veget. A peculiar combination was noted in crossing the mountains where at about 4500 ft. Conocarpus is blended with junipers and Coleogyne ramosissima.

Colorado River. The river valley bottom broadens at the ferry, there being an alluvial bottom or perhaps 2 miles in width extending for 6 or 8 miles, the mountains closing in to the river bank to the north and south.

Camp at the ferry ~~was no longer used~~ ^{moving to the locality of the ferry.}

Sept. 26-28 (Fri), Colorado R. R.

Remained at ^{same} camp at old Searchlight Ferry recently moved about four miles upstream but not yet in commission mainly due to uncompleted road as approach.

River bottom. The river is perhaps

300 yards broad at this point, with a rapid current, as usual elsewhere. On the Nevada side a long gradual, gravelly slope extends for a number to the top of a low ridge, while rugged ranges of hills reach to the river to the north and south. On the Arizona an alluvial bottom about 2 miles wide and 6 or 8 miles long is overgrown with salt ^{marsh} ~~marsh~~ and Atriplex and nearer the river by belts of cottonwood, willows, Prosopis pubescens, mesquite, and dense thickets of tall arrowweeds. A ^{considerable} portion of the alluvial bottom is covered with large dunes of loose, drifting sand - lines of older dunes 10 to 15 ft high are covered with mesquite and other vegetation which acts as a sand binder and the sand is no longer shifting.

Ranches. Several ^{old} ranches are located on the alluvial bottom, the largest being that of a Mr. Pattem who formerly operated the ferry. Small

in alfalfa.

areas are irrigated by pumping water from the river.

The afternoon of the 28th we left the river at 3:15 P.M. and climbed the long steep slope from 750 ft. ~~to~~ the river to a little over 4000 ft. on the crest of the low range of hills flanking the valley. We then ~~then~~ recrossed Detrital Valley and reached Chlondie about 5:45 P.M. - a distance of 28 miles from the river.

Stopped for the night at Hotel Davis in Chlondie.

Weather - The past few days have been dry, but windy as a rule and it has turned decidedly cooler.

Sept. 29.

Left Chlondie and returned to Kingman where after some repairs to car were completed we continued out a few miles to Huapari Mts., camping on the slope at a spring in the upper part of Upper Sonoran zone.

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Sept. 30.

Made a trip to summit of Huapari Mts., the highest peak of which is over 8000 ft. high, where traps were set for Microtus.

I found the old trail followed by me about 10 years ago had largely disappeared and was difficult to trace in many places.

Oct. 1.

Made a trip to top of Huapari and back to camp with Drille and Gueter to bring down traps set yesterday. The latter part of the afternoon was devoted to preparing specimens in camp.

Microtus. Four specimens were secured and they were found common on the extreme summit of the ^{main} peak. Huapari Mts. These mountains,

gradually decreasing in altitude
extended southward for a
considerable distance. The
higher peaks near the northern
end are connected by high
ridges.

Oct. 2.

Left Huapai mts. about 8 A.M.
and followed the highway east
to Seligman and thence south
for perhaps 30 miles where we
camped in the juniper country
of that section.

Oct. 3. Camp S. of Seligman
to Phoenix.

Left camp south of Seligman
and drove via Prescott to
Phoenix where we arrived about
10 P.M.

Oct. 4. Phoenix to near
Canyon, Ariz.

Left Phoenix in evening about 6

17

o'clock and drove north via
Black Canyon road up Agua
Fria Valley to near Canyon where
we camped. Dist. 48 miles

In Phoenix I conferred with
P.A. Kilchrist and M.C. Murgrave
and saw Governor Hunt who
was about to leave for Keibab
to make a personal investigation
of conditions affecting the deer.

Oct. 5. Near Canyon to
Kingman, via Prescott & Seligman.
Drove about 216 miles and
reached Kingman after dark. This
is probably the longest day's
run of our trip.

Oct. 6, Kingman, ^{Ariz.} to Needles,
Calif.

Packed up and shipped outfit
and left Kingman in afternoon
about 2 P.M. Drove about 72 miles
to Needles, Calif.